COCONUT WATER IS GOOD FOR YOUR HEALTH

Prof. H.P.M.Gunasena

Coconut water is the liquid obtained from young nuts of the coconut palm (*Cocos nucifera*) when they are about six months old. It is the liquid endosperm which later hardens to form the flesh or meat of coconut. As the coconut matures, coconut water is gradually replaced by kernel leaving little water. It is one of the most pure and nutritious wholesome beverages.

The people in the coconut growing tropical countries consume it as a popular beverage. The drinking of coconut water has been a tradition in the Asian countries, Hawaii, Pacific Islands, Africa and the Caribbean. In Sri Lanka young coconut water is a popular beverage but king coconut water is preferred to other green and red varieties.

The coconut water is served to Buddhist priests before offering meals. Young coconuts are sold on the roadsides and beaches. Due to the natural freshness, it is a popular among the tourists. The young coconuts are cut in front of the tourists to ensure the freshness. The endosperm which is like a jelly at the immature stage could be mixed with water or eaten separately.

In some countries coconut water is sold in cans, plastic bottles or tetra packs. The coconut water is becoming popular in the world beverage trade as it is pure and refreshing and highly nutritious compared to manufactured beverages. The coconut water is considered a health beverage as it has many benefits to maintain health of people. Due to its multiple health benefits, it is known as the "fluid of life".

The coconut water contains sugar, fibre, proteins, minerals, vitamins, enzymes and antioxidants. On average young coconut water contain reducing sugars such as glucose and fructose (4.23%), total sugars (4.5%), nitrogen (0.0294%), phosphorus (0.021%), potassium (0.28%), calcium (0.034%) and magnesium (0.091%). As the nut matures these constituents decrease, in particular the reducing sugars (1.43%) and total sugars (2.88%).

Young King Coconut

Potassium accounts for more than half of the minerals in coconut water. Coconut water is also rich in minerals like copper and iron. There also trace elements like iodine, sulphur, manganese and selenium in coconut water. It is also rich in amino acids. The amino acid composition of protein in coconut water is appreciable: Alanine (2.41%), Arginine (10.75%), Aspartic acid (3.60%), Cystine (0.97 - 1.17%), Glutamic acid (9.76 - 14.5%), Histidine (1.95-2.05%), Leucine (1.95 - 4.18%), Lysine (1.95 - 4.57%), Proline (1.21 - 4.12%), Phenylalanine (1.23%), Serine (0.59 - 0.91%) and Tyrosine (2.83 - 3.00%). The young coconut water is free of fats and cholesterol.

There is no appreciable difference in chemical composition among commercial coconut varieties grown in Sri Lanka. The total sugar content in king coconut water (Thambili) is 5.8%, hence sweeter than the water of other coconut varieties. Due to its sweetness king coconut water is preferred as a beverage than other varieties. It is common to serve coconut water to quench thirst, promote digestion and destroy intestinal worms. It relieves the intestines of harmful toxins. It also acts as a carminative and relieves gases present in the digestive tract. Monolaurin present in coconut meat is antiviral and antibacterial; hence it kills pathogens such as cytomegalovirus and herpes virus. It also helps to reduce vomiting in patients suffering from malaria and typhoid.

Coconut water is an ideal drink to resolve kidney disorders .The coconut water is recommended to dissolve kidney stones and their easy passage from the urinary tract. Most patients with prescriptions from doctors combine them with coconut water. The plaques or crusts that form in the kidney are also dissolved and removed by coconut water. The patients who suffer from difficulty in urination (stranguria) and frequent urination, (polyuria) and other urinary ailments could get relief by drinking coconut water.

Coconut water has the same electrolyte balance as blood plasma making it an excellent

natural isotonic drink. It replaces the fluids and minerals such as potassium that the body loses during exercise; hence it is considered a sports drink. Coconut water contains more potassium than sports drinks and energy drinks. Sodium in coconut water is less (25mg) than that in sports drinks (117mg) and energy drinks (200mg); as salt is less more will be required if you sweat very heavily during exercise.

As the sugar content of the coconut water is low it is safe for diabetic patients. Intake of coconut water also helps to control weight gain. It also reduces swelling of hands and legs and promotes absorption of drugs.

Coconut water contains vitamins which are necessary for normal body functioning. These include Vitamin C (Ascorbic acid), Thiamine (Vitamin B1) Riboflavin (Vitamin B2), Niacin (Vitamin B3), Pantothenic acid (Vitamin B5), Pyridoxine (Vitamin B6), Folic acid (Vitamin B9) and Nicotinic acid (Niacin). These vitamins are water soluble and required as coenzymes essential for cellular function.

Vitamin B6 affects various body functions such as inflammation and renal function. The deficiency of B6 and B9 can increase the risk of arthrosclerosis and other vascular diseases such as strokes. The young coconut water is reported to promote circulation and lower blood pressure and protect against myocardial infarction. Traditionally it was considered as a heart tonic as it strengthens the heart and removes plaque from the arteries. These vitamins could also reduce the risk of breast cancer. Coconut water also contain folate (Vitamin B9) which could reduce anaemia during pregnancy. Coconut water is an excellent dietary antioxidant.

It is good news that coconut water has anti-ageing properties. Coconut has cytokinin, which is among the most beneficial components. It is a plant growth hormone which regulates cell growth and development and commonly used in the tissue culture of plants such as orchids, anthuriams, and traditional Chinese herbs. The cytokinins in coconut water support cell division and promote their rapid growth. The drinking of coconut water containing cytokinin could slow the ageing by keeping the cell structure strong. The anti-ageing effects of coconut water on human skin cells have provided opportunities to develop skin care products containing kinetin to treat photo-damaged skins. Cytokinins are also reported to have cancer curing properties and may bring novel perspectives to finding cures for cancers.

There is conclusive research evidence that young coconut water has many health benefits. Its chemical content has been extensively studied but the information on the special biological effects is yet to be understood. The reports also indicate that coconut water from different countries differ in composition. The coconut water from Brazil is reported to be tasteless, while the Sri Lankan and Indian coconut water is sweet. Also, different varieties are reported to contain different concentrations of health promoting compounds.

The agronomic practices such as fertilizer application have been reported to produce differences in the composition of coconut water. Except for the king coconut and dwarf varieties that are used only as a beverage, the information on other green or red coconut varieties are also scanty. It is necessary to identify the best varieties for beverage purposes and further research will be required to develop specific varieties by breeding to evolve composite varieties with several biological properties that contribute to human health .

The global trend on the use of natural beverages such as coconut water is encouraging and markets can be created due to their health benefits. At present efforts are being made by several Sri Lankan entrepreneurs to develop a coconut water industry for export. Some industrialists are attempting to use the waste coconut water from the desiccated coconut industry to produce this beverage. The Coconut Research Institute has also received many requests to establish plantations for green nut harvest. This is certainly encouraging as the potential to develop a viable coconut water industry exists. However, several issues have to be considered. The current annual production level is 2700 million nuts and this is inadequate support a coconut water industry.

This is due to high local consumption of about 2000 million nuts per year which accounts for 80 - 85% of the total nut production. The balance only is available for the desiccated and coconut oil manufacturing industries. These industries often suffer in some years due to the shortfall in nut production. If an industry is to be developed the coconut extent which is currently 394,386 hectares has to be substantially increased. The Ministry in its strategic plan for coconut development during 2011 – 2016 anticipates to increase the extent to 455,000 hectares and to produce 3650 million nuts by 2016. This may be adequate to cater to consumption needs and to existing industries but not for viable coconut water industry. Therefore, further increase in extent and productivity is required to cater to this emerging new industry.

Prof. H.P.M.Gunasena is Chairman of Coconut Research Institute, Sri Lanka.